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PATENT ABSTRACTS OF JAPAN

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(71) Applicant: **TOSHIBA CORP**

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ENDO NAOKI

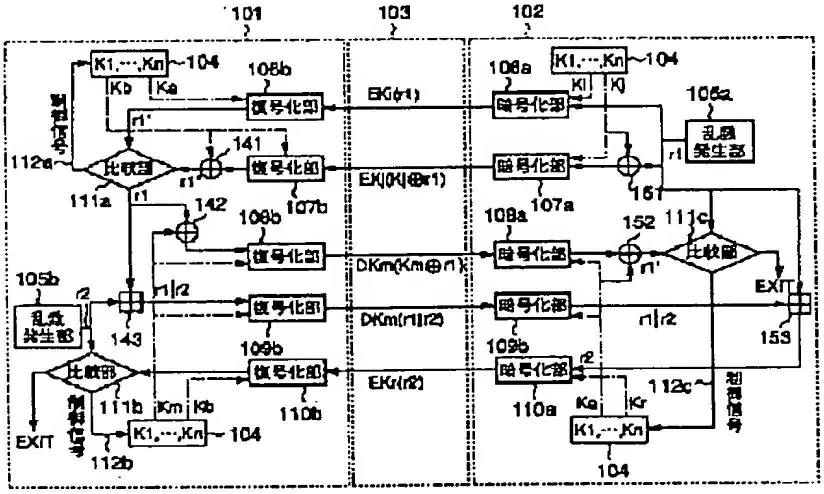
(74) Representative:

(54) DEVICE AUTHENTICATION METHOD, SYSTEM AND AUTHENTICATION SYSTEM

(57) Abstract:

PROBLEM TO BE SOLVED: To allow a system to authenticate securely and surely whether or not an opposite party is a valid device by making more difficult to estimate a secret key against a 3rd party's attack.

SOLUTION: The system is provided with a storage means that stores a bundle of a plurality of different private keys, a random number generating means 105a, encryption means 106a, 107a that uses a random number generated by a random number generating means or applies a prescribed arithmetic operation to the random number, uses any private key of the bundle for an encryption key to conduct encryption and to produce authentication information a communication means that sends the authentication information to a device of an authentication object, and a decoding means 108a that decodes return information received from the device of the authentication object by using the key bundle, and an authentication means 111c that compares decoding information r1' decoded by the decoding means with a random number r1 and authenticates the device of the authentication object to be a legal device when the docoded information is based on the random number.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141
Kb
Ka
比較部
112a
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111a
107b
EKj(Kj⊕r1)
107a
151
142
108b
108a
152
111c
DKm(Km⊕r1)
r1'
EXIT
105b
r2
r1||r2
143
DKm(r1||r2)
153
109b
109a
110a
110b
EKr(r2)
112c
Km
Kr
111b
112b
EXIT